

Mr. E. W. Morain, P.E.
Manager of Plastic Division
Continental Industries, Inc.
P.O. Box 994
Tulsa, OK 74101

Dear Mr. Morain:

In your February 23, 1976, letter you discuss the possible installation of thermoplastic pipe above ground and then ask:

"If the thermoplastic material is completely encased (especially in a service riser situation) in a material, such as fiber glass reinforced epoxy pipe to maintain its hoop and longitudinal strength at 140°F, is it then suitable to bring it above ground?

The temperature limitations set by Section 192.123(b)(1) and (2) would apply to the plastic pipe that is carrying the gas. The example that you give would use thermoplastic pipe as the gas carrier and thus be limited to 100°F.

It should be noted that Section 192.321(a) requires that "Plastic pipe must be installed below ground." The only exception to this is covered in Section 192.375 which only applies to service lines. There is no exception that would permit the use of plastic piping above ground on other gas piping.

The use of higher strength material as a close fitting jacket to provide the strength needed at elevated temperatures was not considered in establishing the regulations. The strength requirements that are established are for the pipe to be subjected to the gas pressure.

We have in the past had no reliable data on the actual temperatures to expect on a metallic cased plastic service riser. However, we were recently made aware of test data being developed concerning the performance of thermoplastics at temperatures above the 100°F limitation. The studies now being performed are intended to establish actual temperature

limits in service risers at representative locations across the country. From the information available to date, we are not yet able to consider the data conclusive.

Thank you for your interest in pipeline safety.

Sincerely,

/signed/

Cesar DeLeon

Acting Director

Office of Pipeline Safety

Mr. Cesar DeLeon
Acting Director
Office of Pipeline Safety
Department of Transportation
Washington, DC

Dear Mr. DeLeon:

I would like to have the question clarified of limiting thermoplastic materials to 100°F when used in natural gas distribution. Having worked on the AGA, ASTM, and PPI technical committees for a good many years I understand the reason for the limitation, but I would like an interpretation from you.

The prime reason for limiting the use of thermoplastic materials to 100°F, as I understand it, is because it loses its hoop and longitudinal strength as the temperature increases, especially over 100°F.

My question is, "If the thermoplastic material is completely encased (especially in a service riser situation) in a material, such as fiber glass reinforced epoxy pipe to maintain its hoop and longitudinal strength at 140°F, is it then suitable to bring it above ground?"

It has been demonstrated that the currently used polyethylene material in the gas distribution systems have the ability to expand at higher temperatures and act as a liner in the higher hoop strength materials and still maintain their gas tight integrity. Thus, it seems a logical solution to utilize the hoop strength of a higher temperature material to withstand pressure at higher temperature.

Respectfully,

Eldon W. Morain, P.E.
Manager of Plastic Division